

# Data Storage Management and Scheduling System

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## ABSTRACT

A data storage management and scheduling system schedules the recording, storing, and deleting of television and Web page program material on a client system storage medium. The invention accepts as input a prioritized list of program viewing preferences which is compared with a database of program guide objects which indicate when programs of interest are actually broadcast. A schedule of time versus available storage space is generated that is optimal for the viewer's explicit or derived preferred programs. The preferred programs include television broadcast programs and Universal Resource Locators (URLs). The viewer may request that certain programs be captured, which results in the highest possible priority for those programs, or express preferences using appurtenances provided through the viewer interface. Preferences may additionally be inferred from viewing patterns. The invention correlates an input schedule that tracks the free and occupied time slots for each input source with a space schedule that tracks all currently recorded programs and the programs that have been scheduled to be recorded in the future, to schedule new programs to record and resolve recording conflicts. A program is recorded if at all times between when the recording would be initiated and when it expires, sufficient space is available to hold it. All scheduling conflicts are resolved as early as possible. A background scheduler schedules each preferred program in turn until the list of preferred programs is exhausted or no further opportunity to record is available.